

WHAT IS CLAIMED IS:

1. A lightweight portable apparatus for producing simultaneous rotating and linearly reciprocating motion and transmitting such motion to a suitable self stimulation
5 masturbation device, said apparatus comprising:

a **power transmission assembly** including a drive shaft;

connection means associated with the drive shaft adapted to enable rotatable connection
10 of the drive shaft to an external rotating power source;

attachment means affixed to the distal end of said drive shaft and adapted to attach to and transmit motion from the drive shaft to a selected suitable self stimulation device; and

15 optionally, a **stand-off assembly**, adapted to keep the operating components of the power transmission assembly and the stimulation device safely away from the user;

said **power transmission assembly** comprising

a **linear actuation assembly** adapted to receive rotary motion from the drive shaft;
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rotary energy transmission means associated with said drive shaft to transmit rotary energy from the drive shaft to the linear actuation assembly;

said **linear actuation assembly** comprising

a **transmission fork** fixedly attached to said **drive shaft**; and
25 a **cammed shuttle** connected to said transmission fork and adapted to receive rotational energy therefrom,
a **cam follower** fixedly mounted to engage said cammed shuttle and induce linear reciprocation of the shuttle within a confined space as it simultaneously rotates.

- 30 2. The apparatus according to claim 1, wherein the power transmission assembly includes a gearbox assembly containing at least two gears and the linear

actuation assembly includes a clutch assembly.

3. The apparatus according to claim 1, wherein the attachment means includes a
universal adapter suitable to receive and attach to a multiplicity of self
5 stimulation devices.

4. The apparatus according to claim 1, wherein a stand-off assembly is included and
comprises a tube adapted to be secured in place at the distal end of the power
transmission assembly.

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5. The apparatus according to claim 1, wherein the linear actuation assembly
comprises:

a generally tube-shaped outer protective transmission housing connected to and
surrounding said drive shaft and directly associated therewith;

15 a drive train mechanism also within said transmission housing and adapted to
receive rotary motion from the drive shaft;

an oscillating shuttle adapted to fit within the transmission housing and to move
linearly therein, said shuttle having at least one cam groove cut into the
outer surface thereof;

20 at least one cam follower fixedly mounted on the transmission housing and adapted
to engage said at least one cam groove in the shuttle and thereby induce
linear reciprocation of the shuttle following the profile of the cam groove
when the shuttle rotates;

25 a rotatable transmission fork located within the linear shuttle and fixed in place
laterally relative to the transmission housing and fixedly attached to said
second means to receive rotational energy therefrom;

said transmission fork being adapted such that rotation of the laterally fixed
transmission fork is transmitted to the shuttle, but the shuttle is still free to move

linearly within the transmission housing.

6. A lightweight portable apparatus for producing simultaneous rotating and linearly reciprocating motion and transmitting such motion to a suitable self stimulation masturbation device comprising:

a power transmission assembly including a drive shaft;
connection means associated with the drive shaft to enable rotatable connection of the drive shaft to an external rotating power source and
a universal adapter affixed to the distal end of the power transmission assembly so as to move in synchrony with the active components of said power transmission assembly, said universal adapter being adapted to connect with and transmit the those movements to a suitably selected stimulation device; and
optionally, a stand-off assembly, adapted to keep the operating components of the power transmission assembly safely away from the user,

said power transmission assembly comprising

a generally tube-shaped outer protective transmission housing
a drive shaft within said transmission housing and directly associated therewith;
a drive train mechanism also within said transmission housing and adapted to receive rotary motion from the drive shaft;
second means associated with said drive shaft to transmit rotary energy from the drive shaft to the drive train mechanism;

said drive train mechanism comprising

an oscillating shuttle adapted to fit within the transmission housing and to move linearly therein, said shuttle having at least one groove cut into the outer surface thereof; at least one cam follower fixedly mounted on the transmission housing and adapted to engage a the groove in the ~~linear~~ shuttle and thereby induce linear reciprocation of the shuttle following the profile of the groove when the shuttle rotates;

a rotatable transmission fork located within the linear shuttle and fixed in place laterally relative to the transmission housing and fixedly attached to said second means to receive rotational energy therefrom;

said transmission fork being adapted such that rotation of the laterally fixed transmission fork is transmitted to the shuttle, but the shuttle is still free to move linearly within the transmission housing, and

said stand-off assembly comprising

a tube adapted to be secured in place on the distal end of the protective transmission housing of the power transmission assembly.

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7. The device according to claim 6, wherein said stand-off assembly for the male configuration is longer than that for the female configuration.

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8. The device according to claim 6, wherein a transmission extension is fixedly connected inside the distal end of the shuttle and extending outside the shuttle, said connection being by way of a clutch assembly, including a compressible elastomer o-ring and a hard, solid clutch washer such that when compressed by the clutch washer, the o-ring will expand radially outwards to create frictional contact with the inside of the shuttle.

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9. The device according to claim 8, wherein the clutch assembly includes a clutch base attached rigidly to the top of the transmission extension and a clutch screw threaded into said clutch base where the amount of frictional contact between the o-ring and the clutch washer is adjusted by threading the clutch screw into the clutch base.

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10. The device according to claim 1, wherein the action of the shuttle is electromagnetically induced.
- 5 11. The device according to claim 1, wherein the action of the shuttle is entirely mechanically induced.
- 10 12. The device according to claim 1, wherein the transmission and shuttle assemblies are made longer and larger radially such that the shuttle itself is capable of carrying a male masturbation sleeve internal to that component as well as being adaptable to actuating female devices by way of a reducing adapter.
- 15 13. A device according to claim 1, wherein the stand-off assembly further comprises a stand-off extender adapted to slip over the outside of the stand-off tube to enable the user to linearly position the masturbation device within the overall assembly;
said stand-off extender being adapted to be locked in place after adjustment.
- 20 14. The device according to claim 13, wherein said stand-off assembly for the male configuration is longer than that for the female configuration.
- 25 15. The device according to claim 1, altered as necessary for the collection of semen in animal breeding programs.